BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of

Modernizing the E-rate
Program for Schools and Libraries

WC Docket No. 13-184

COMMENTS OF PATRICK J CLEMINS

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Introduction

In 2011, the Vermont National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR) received a $1.0 million grant (NSF EPS-1107945) to improve network connectivity both within the University of Vermont's campus and between the University and its research and education partners. As part of this grant, Vermont EPSCoR hired an Internet2 Sponsored Educational Group Participant (SEGP) Network coordinator to establish a statewide Vermont Internet2 SEGP Network and to promote the resources available through the Internet2 community to the Vermont research and education community. In the course of accomplishing these tasks, Vermont EPSCoR has engaged a broad cross section of Vermont's K-12 and higher education institutions, along with museums and libraries, and has helped them improve their connectivity, integrate broadband content into their educational programs, and network with their colleagues who share an interest in using broadband resources to enhance their curricula and outreach. E-rate has been a valuable resource in helping educational institutions connect to Vermont's statewide Internet2 SEGP network, but it currently ***lacks the flexibility required to allow institutions to make smart, long-term cost-saving investments*** in their connectivity infrastructure. Thus, we welcome the opportunity to comment on Federal Communications Commission WC Docket No. 13-184: Modernizing the E-rate Program for Schools and Libraries.

Internet2

With the awarding of the aforementioned grant, Vermont EPSCoR has become an active member in Internet2's K20 Initiative which brings together Internet2 member institutions and innovators from primary and secondary schools, colleges and universities, libraries, and museums to extend new technologies, applications, middleware, and content to all educational sectors. Vermont EPSCoR generally supports the Internet2 comments submitted under this WC Docket, and would like to highlight some of Internet2's recommendations with examples of how we have successfully implemented those recommendations, to some degree, in Vermont.

Flexible Connectivity

For many small to medium sized supervisory unions (a formal collection of school districts in Vermont) with adequate access to telecommunications infrastructure, the provisioning of lit fiber (or copper) through a local Internet Service Provider is the most cost-effective and efficient means of providing connectivity to their students, staff, and communities. However, on the ends of that spectrum, large supervisory unions, or small, extremely rural supervisory unions, this traditional connectivity architecture has is shortcomings. Large supervisory unions often have the resources to manage their own networks and could realize significant long-term cost savings by provisioning their own dark fiber. This is especially true in urban and suburban areas where these unlit fiber resources are readily available for long-term lease or purchase. It has been our experience in Vermont that the upfront cost of this connectivity option is offset by the freedom from long term service contracts and competition for IP services which is not possible when utilizing privately owned fiber infrastructure. This decoupling of the fiber infrastructure from IP services has allowed some of our larger supervisory unions to realize significant long-term cost savings while giving them the flexibility that comes with managing their own network.

Small, rural schools and supervisory unions in Vermont are also not well served by the traditional connectivity model. In these areas, local telecommunications providers have a monopoly or near-monopoly and thus, moderate bandwidth can be prohibitively expensive. Vermont's Broadband Technology Opportunities Program (BTOP) grants have begun to alleviate this situation in many regions

of the state, but Vermont's North East Kingdom, the State's most rural and economically-challenged region, and a number of other rural areas were not served by these BTOP grants. The Vermont Telecommunications Authority (VTA) is coordinating and financing a fiber build in the North East Kingdom, but with the current E-rate system, schools will still be locked in to a specific carrier who manages that fiber. If the supervisory unions in the region could collectively provision the dark fiber, they could realize the same long-term cost savings as the large urban supervisory unions as described above without entering into long-term service contracts. While this may not be the preferred solution for all supervisory unions, creative, cost-conscious solutions such as these should be allowable under the revised E-rate reimbursement rules.

Use of Consortia

While Vermont does not have a formal statewide consortium for the purchase of Internet connectivity, Vermont is participating in a three-state partnership to purchase computing devices for 1-to-1 programs at a large discount to our schools and supervisory unions. There is also a consortia under consideration for the purchase of connectivity through the North East Kingdom fiber project discussed previously. Besides the bargaining advantages that come from utilizing a consortia, a consortia can also provide a community of best practice and support. While consortia will not always be available or may not be the best option, schools and supervisory unions should be encouraged to utilize or establish consortia when appropriate.

Public-Private Partnerships

Finally, Vermont has utilized public-private partnerships extensively to create the Vermont Internet2 SEGP Network. Instead of building out a separate fiber network, Vermont has utilized existing service provider networks and established peering relationships between each private network and an aggregation point established at the state's sole Internet2 member, the University of Vermont (UVM). UVM has dedicated the use of a router specifically for the statewide SEGP network. The standard agreement with the service providers is that while UVM will pay for all Internet2 traffic, it is the responsibility of the service provider to establish a route into the UVM network. To eliminate competition between UVM and the service providers for commodity traffic, only Internet2 traffic, and traffic to other Vermont SEGP Network participants, is routed via the UVM aggregation point. All of the routes are managed via Border Gateway Protocol (BGP). We are currently partnering with five Internet Service Providers operating in the state and will have over half of the K12 schools in Vermont participating in the SEGP network by the end of the summer of 2014 just 2.5 years after the start of this effort.

These specific public-private partnerships benefit all parties involved. SEGP-participating institutions receive Internet2 access and more robust connectivity to their Vermont peers, and service providers are able to reduce their out-of-state bandwidth costs through the utilization of the peering relationship with UVM. Public-private partnerships such as this often result in significant cost savings by eliminating the over building of fiber networks and should be encouraged in the modernized E-rate program.

Summary

Vermont EPSCoR generally supports the recommendations submitted by Internet2 and has provided some specific examples of how some of those recommendations have been implemented with success in our State. We look forward to a more flexible, modern E-rate program that better serves the needs of schools of all sizes and promotes the adaption of the Nation's ambitious broadband goals.